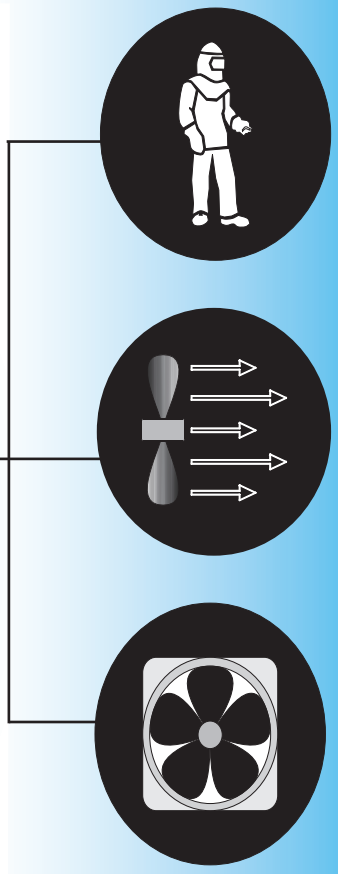
DOSH

Division of Occupational Safety and Health

# Abrasive Blasting



## Chapter 296-818 WAC

### September 2006 Edition

F414-144-000

09/2006 printing

Department of LABOR AND INDUSTRIES

# Standards Update to
# Chapter 296-818 WAC, Abrasive Blasting

## Issue Date 9/2006
## Effective Date 9/1/2006

The Department of Labor and Industries has rewritten and reorganized for clarity and ease of use the safety standards for Abrasive Blasting. The general industry requirements relating to Abrasive Blasting have been repealed from Chapter 296-24 WAC, General Safety & Health Standards and adopted as Chapter 296-818 WAC, Abrasive Blasting.

**Chapter 296-24 WAC, General Safety & Health Standards**

- Please discard Part H-2 (296-24-675 through 67521)

To receive future updates of this standard and all other Department of Labor and Industries safety and health standards electronically, please sign up on the WISHA Listserv (http://www.lni.wa.gov/Safety/Rules/default.htm). By subscribing to the Listserv, you will also receive rule updates, hearing notices, and informational packets for all safety and health rules.

Also available on the WISHA web site:

- WISHA Core Rules
- Other General WISHA Rules
- Industry and Task-specific Rules
- Proposed rules and hearings
- Newly adopted rules and new rule information
- WISHA Regional Directives (WRDs)
- WISHA Interim Operations and Interpretive Memoranda (WIIM)
- Memoranda of Understanding (MOU)

To receive hardcopy updates of this rule, please return the card located at the back of the book.

# Abrasive Blasting

Chapter 286-818 WAC

## Other Rules that may apply to your workplace

- The WISHA Safety and Health Core Rules, Chapter 296-800 WAC, contain the basic requirements that apply to most employers in Washington. They also contain:
  - An Introduction that lists important information you should know, including a section on building, fire and electrical codes.
  - A Resource section that includes a complete list of all WISHA rules and a directory of the Labor and Industries (L&I) offices.
- Other WISHA rules may apply to you, depending on the activities and operations of your workplace. Contact your local L&I office if you're uncertain about which WISHA requirements apply to you.
- To go online to access all the Safety and Health Rules: http://www.lni.wa.gov/wisha
- If you would like to receive e-mail notification of rule updates, please register for the Standards Listserv on the WISHA web site at http://www.lni.wa.gov/home/listservs.htm
- For a CD or paper copy contact us by:

Mail: Department of Labor and Industries
P.O. Box 44620
Olympia, WA 98504-4620

Telephone: 1-800-4BE-SAFE (1-800-423-7233)

# Abrasive Blasting

Chapter 296-818 WAC

# Quick Reference


| TITLE | PAGE |
|---|---|
| Scope<br>WAC 296-818-100 | 100-1 |
| General safety<br>WAC 296-818-200 | 200-1 |
| Operations<br>WAC 296-818-300 | 300-1 |
| Exhaust ventilation systems<br>WAC 296-818-400 | 400-1 |
| Definitions<br>WAC 296-818-500 | 500-1 |
| Resources | R-1 |
| Index | IN-1 |
| Statutory Authority | SA-1 |

# Abrasive Blasting

Chapter 296-818 WAC

## Chapter Contents

**TITLE** **PAGE**


Scope
WAC 296-818-100 ..... 100-1

General safety
WAC 296-818-200 ..... 200-1

Dust hazards
WAC 296-818-20005 ..... 200-2

Personal protective equipment (PPE)
WAC 296-818-20010 ..... 200-3

Housekeeping
WAC 296-818-20015 ..... 200-6

Operations
WAC 296-818-300 ..... 300-1

Combustible organic abrasive
WAC 296-818-30005 ..... 300-2

Blast cleaning enclosures
WAC 296-818-30010 ..... 300-3

Blast cleaning nozzles
WAC 296-818-30015 ..... 300-5

# Abrasive Blasting

Chapter 296-818 WAC

## Chapter Contents


Exhaust ventilation systems
WAC 296-818-400 ..... 400-1

Construction
WAC 296-818-40005 ..... 400-2

Explosion venting and wiring
WAC 296-818-40010 ..... 400-3

Inspection and maintenance
WAC 296-818-40015 ..... 400-4

Definitions
WAC 296-818-500 ..... 500-1

Resources ..... R-1

Index ..... IN-1

Statutory Authority ..... SA-1

# Abrasive Blasting

WAC 296-818-100

## Scope



This chapter applies to all abrasive blasting operations where an abrasive is forcibly applied to a surface using any of the following:

- Pneumatic pressure
- Hydraulic pressure
- Centrifugal force

**References:**

Depending on your work processes, here are examples of other chapters you may need:

- Safety and Health Core Rules, Chapter 296-800 WAC
- Machine Safety, Chapter 296-806 WAC
- Respiratory Hazards, Chapter 296-841 WAC
- Respirators, Chapter 296-842 WAC
- Scaffolds, Chapter 296-874 WAC
- Cadmium, Chapter 296-62 WAC
- Part L, Electrical, Chapter 296-24 WAC

# General Safety

WAC 296-818-200

## Section Contents

**YOUR RESPONSIBILITY:**

**To protect employees from hazards associated with their work environment**


Dust hazards
WAC 296-818-20005 ..... 200-2

Personal protective equipment (PPE)
WAC 296-818-20010 ..... 200-3

Housekeeping
WAC 296-818-20015 ..... 200-6




# General Safety

WAC 296-818-200

# Rule

WAC 296-818-20005

## Dust hazards

### IMPORTANT:

- Abrasives and the surface coatings on materials blasted are shattered and pulverized during blasting operations. The dust formed will contain particles that could result in the following hazards:
  - Respiratory
  - Fire
  - Explosion
- Wet blasting methods minimize dust exposure, but dispersed droplets, mists, and dried residues may become airborne and create potential exposures.

### You must

- Evaluate the potential health hazards from abrasive blasting operations by considering the composition and toxicity of the abrasive material and the surface being abraded.

**References:**

- For additional hazard assessment requirements, go to these separate chapters:
  - Respirators, Chapter 296-842 WAC
  - The Safety and Health Core Rules, Chapter 296-800 WAC
  - Personal Protective Equipment, WAC 296-800-16005.
- For requirements on the use of combustible organic abrasive, go to WAC 296-818-30005.

-Continued-

WAC 296-818-20005

## Dust hazards (continued)

### You must

- Keep dust concentrations below the permissible exposure limits found in a separate chapter, Respiratory Hazards, Chapter 296-841 WAC.

**Note:**

When sampling for dust concentrations, place the sample collection device:

- In the breathing zone of the operator

**and**

- Outside the respiratory protection worn

**Helpful tools:**

**Sampling for Airborne Contaminant Concentrations**

Links you can use to find information on sampling airborne contaminant concentrations in the breathing zone can be found in the Resource section of this chapter

**Types of Abrasives used in Blasting Operations**

For information on the types of abrasives used in blasting operations, see the Resource section of this chapter

**Types of Coatings Removed in Blasting Operations**

For information on the types of coatings removed in abrasive blasting, see the Resource section of this chapter.

WAC 296-818-20010

## Personal protective equipment (PPE)

### You must

- Supply and make sure personal protective equipment is worn.
- Follow the requirements in Table-1, Personal Protective Equipment (PPE).

-Continued-

# Rule

WAC 296-818-20010

## Personal protective equipment (PPE) (continued)

**Table 1**
**Personal Protective Equipment (PPE)**

| Provide | When |
|---|---|
| **Abrasive Blasting Respirators** | Operators work in any of the following situations:<br>– Inside blast cleaning rooms<br>– Where silica sand is used in manual blasting operations<br>– Where concentrations of toxic dust exceed the permissible exposure limits found in a separate chapter:<br>• Respiratory Hazards, WAC 296-841-20020, Table-3 "Exposure Limits for Air Contaminants"<br>**Exemption:**<br>An abrasive respirator doesn't need to be worn if the operator is physically separated from the nozzle and blast by an exhaust ventilated enclosure.<br>**Definition:**<br>**Abrasive-blasting respirator**<br>A supplied air or a continuous flow respirator constructed to cover and protect the operator's head, neck and shoulders from rebounding abrasive. |
| **Eye and Face** protection to both of the following:<br>– Blasting operators<br>– Personnel working near blasting operations | Respirators worn during blasting operations don't provide eye and face protection |
| **Gloves and Aprons** made of heavy canvas or leather;<br>**or**<br>**Equivalent protection** | Operators are exposed to the impact of rebounding abrasives |

-Continued-



WAC 296-818-20010
## Personal protective equipment (PPE) (continued)

**Notes:**

- Use only respirators certified by NIOSH in 42 C.F.R. Part 84 for protecting employees from dusts, and other hazards produced during abrasive blasting operations, like:
  - Using a garnet sand to blast a concrete surface, resulting in crystalline silica dust
- A filtering face piece may be used only for short, intermittent, or occasional dust exposures for any of the following tasks:
  - To protect the operator during abrasive blasting operations performed outside the enclosure or outdoors where nonsilica abrasives are used on materials with low toxicity
  - Clean-up
  - Dumping dust collectors
  - Unloading shipments of sand at receiving areas when the following controls aren't feasible:
    - Enclosures
    - Exhaust ventilation

      **or**
    - Other means

**Reference:**

For additional requirements to help you fully protect employees, go to the following separate chapters:

- The Safety and Health Core Rules, Chapter 296-800 WAC:
- Personal Protective Equipment (PPE), WAC 296-800-160
- Respiratory Hazards, Chapter 296-841 WAC
- Respirators, Chapter 296-842 WAC:
  - Respirator program, WAC 296-842-120
  - Specifications for air quality, WAC 296-842-200

# General Safety

WAC 296-818-200

# Rule

WAC 296-818-20015

## Housekeeping

### You must

- Keep aisles and walkways clear of steel shot or similar abrasives that may create a slipping hazard.
- Prohibit the accumulation of dust on the floors or ledges outside blasting enclosures.
- Clean up dust spills promptly.

**Note:**

Removal of accumulated dust should be done:

- With a high efficiency particulate air filter (HEPA), vacuum cleaner when the plant isn't in operation;

**and**

- By a person wearing a respirator approved for the existing conditions

**Reference:**

For additional housekeeping requirements, see the Safety and Health Core Rules, Chapter 296-800 WAC, Housekeeping, WAC 296-800-220.

# Operations

WAC 296-818-300

## Section Contents

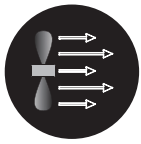
### YOUR RESPONSIBILITY:

**To follow these operational requirements**


Combustible organic abrasives
WAC 296-818-30005 ..... 300-2

Blast cleaning enclosures
WAC 296-818-30010 ..... 300-3

Blast cleaning nozzles
WAC 296-818-30015 ..... 300-5

# Operations

WAC 296-818-300

# Rule

WAC 296-818-30005

## Combustible organic abrasive

### IMPORTANT:

This section applies to blasting operations where flammable or explosive dust mixtures may be present.

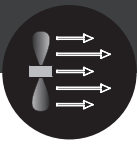
### You must

- Prohibit the use of combustible organic abrasives, except in automatic blast cleaning systems.
- Bond and ground the blast nozzle to prevent the buildup of static charges.

**Note:**

Fine dust produced from combustible, organic abrasive is a fire and explosion hazard.





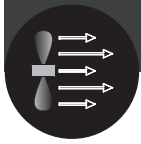
WAC 296-818-30010

## Blast cleaning enclosures

### You must

- Install adequate ventilation systems in blast cleaning enclosures that are able to do all of the following:
  - Control concentrations of airborne contaminants below the permissible exposure limits that apply
  - Provide a continuous inward flow of air at all openings in the enclosure during blasting operations
  - Minimize the escape of dust into adjacent work areas
  - Maintain visibility in blast cleaning rooms and cabinets
  - Rapidly clear dust from the air after blasting stops
  - Discharge exhaust so contaminated air doesn't do either of the following:
    - Present a health hazard to any worker
      **or**
    - Reenter buildings in harmful amounts
- Make sure ventilation systems are designed and operated so employees aren't exposed to excessive air velocities
- Make sure make-up air systems don't interfere with the effectiveness of the exhaust system, and are designed to do both of the following:
  - Replace exhausted air in ample quantities
  - Temper make-up (supply) air when necessary
- Do both of the following before opening the blast cleaning enclosure:
  - Turn the blast off
  - Run the exhaust system for a sufficient period of time to clear the air of dust particles
- Follow the requirements in Table-2, Blast Cleaning Enclosures.





-Continued-

# Rule

WAC 296-818-30010

## Blast cleaning enclosures (continued)

**Table 2**
**Blast Cleaning Enclosures**

| If you have | Then make sure |
|---|---|
| Air inlets and access openings | They are either baffled or arranged so the combination of inward airflow and baffles minimizes both of the following:<br>– The escape of abrasive or dust particles into adjacent work areas.<br>– Visible spurts of dust |
| Small access openings where dust might escape | Slit resistant baffles are installed in multiple sets at **all** small access openings, and do both of the following:<br>– Regularly inspect them<br>– Replace them when needed |
| An observation window in enclosures where hard, deep cutting abrasives are used | The window is made of safety glass protected by screening<br>**Notes:**<br>– Hard, deep cutting abrasives may shatter normal glass.<br>– If the safety glass shatters, the protective screening will help contain the glass and protect employees from cuts and lacerations. |
| Small operator access doors | They are flanged and tight when closed, and open from both inside and outside the enclosure.<br>**Note:**<br>If you have a small operator access door and a large work access door, the large work access door may open or close from the outside only. |

**Helpful tool:**

**Blast Cleaning Enclosures and Recommended Air Velocities**

For information on types of blast cleaning enclosures and recommended air velocities, see the Resources section of this chapter.

**-Continued-**

WAC 296-818-30010

## Blast cleaning enclosures (continued)

**References:**

For more information on:

- Air velocities, refer to the following:
  - The latest edition of Recommended Industrial Ventilation Guidelines (ACGIH)
  - NIOSH 1976 Industrial Ventilation
- Exit routes, go to the Safety and Health Core Rules, WAC 296-800-310.

WAC 296-818-30015

## Blast cleaning nozzles

### You must

- Make sure nozzles are all of the following:
  - Mounted on a support when not in use
  - Equipped with operating valves that are manually held open.

**Note:**

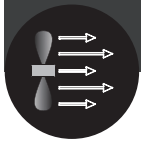
To help prevent the buildup of static charges, pressurized tanks used to supply abrasive should be:

- Connected to the manual control of the nozzle

**and**

- Have the relief valve or opening located so it can safely vent.





# Exhaust Ventilation Systems

WAC 286-818-400

## Section Contents

**YOUR RESPONSIBILITY:**

**To make sure exhaust ventilation systems meet these requirements**


Construction
WAC 296-818-40005 ..... 400-2

Explosion venting and wiring
WAC 296-818-40010 ..... 400-3

Inspection and maintenance
WAC 296-818-40015 ..... 400-4

# Exhaust Ventilation Systems

WAC 296-818-400

# Rule

WAC 296-818-40005

## Construction

### You must

- Make sure exhaust systems are constructed, installed, inspected, and maintained to meet both of the following:
  - The American National Standards Institute (ANSI), Z9.2-2001 for:
    - Fundamentals Governing the Design and Operation of Local Exhaust Systems
  - The National Fire Protection Association (NFPA) 91-2004 for:
    - Exhaust Systems for Air Conveying of Vapors, Gases and Noncombustible Particulate Solids.

**Reference:**

- Refer to the American National Standards Institute, ANSI Z9.4-1997 for information on the following:
  - Exhaust Systems for Abrasive-blasting Operations, Ventilation, and Safe Practices for Fixed Location Enclosures.

WAC 296-818-40010

## Explosion venting and wiring

### You must

- Follow the requirements in Table-3 for flammable or combustible dust mixtures.

**Table 3**
**Explosion Venting and Wiring**

| If you have | Then |
|---|---|
| Flammable or explosive dust mixtures that may be present | Make sure the construction of equipment, including the exhaust system and all electrical wiring, meets both of the following<br>– The American National Standard Installation (ANSI) of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, NFPA 91. 2004.<br>– The electrical requirements for Class II locations in WAC 296-24-95613, located in Part L of chapter 296-24 WAC.<br>Make sure blast cleaning enclosures, the ducts, and the dust collector are constructed with either loose panels or explosion venting areas that meet all of the following:<br>– Provides pressure relief in case of an explosion.<br>– Are located away from occupied areas.<br>– The Guide for Deflagations, NFPA 68. 2002. |

# Exhaust Ventilation Systems

WAC 296-818-400

# Rule

WAC 296-818-40015

## Inspection and maintenance

### You must

- Make sure the exhaust ventilation system is fully operational by checking the static pressure drop at the exhaust ducts leading from the equipment at both of the following times:
  - When installation is completed
  - Annually after installation.
- Repair or clean exhaust systems when either of the following occur:
  - Dust leaks are found
    **or**
  - The pressure drop gauge indicates a change exceeding 20 percent.
- Use an abrasive separator to separate larger particles for reuse on installations where abrasive is recirculated.
- Set up dust collecting equipment to do both of the following:
  - Empty and remove accumulated dust without contaminating work areas
  - Discharge the air used in blast cleaning equipment.

**Note:**

Dispose fine dust from dry collectors by doing one of the following:

- Emptying and transporting the fine dust in enclosed containers
- Using a sluice with a wetting process to contain the dust.

# Abrasive Blasting

WAC 296-818-500

# Definitions

## Abrasive

A solid granular substance used in abrasive blasting operations.

## Abrasive blasting

The forcible application of an abrasive to a surface using either:

- Pneumatic or hydraulic pressure

**or**

- Centrifugal force

## Abrasive-blasting respirator

A supplied air or a continuous flow respirator constructed with a shroud that covers and protects the head, neck, and shoulders.

## Automatic blast cleaning systems

A unit that has a blast cleaning chamber which usually has both of the following to provide a timed cleaning cycle:

- An automatic timer

**and**

- An automatic shutoff control

## Baffles

Partial enclosures in and around the emission sources which improve or enhance airflow at the hood.

## Blast cleaning barrel

A complete enclosure that rotates on an axis or an internal tread to tumble parts in order to expose various surfaces of the parts to an automatic blast spray.

## Blast cleaning room

An enclosed room where blasting operations are performed by an operator who works from inside the room using a blasting nozzle to direct the flow of abrasive material.

# Abrasive Blasting

WAC 296-818-500

# Definitions

### Blasting cabinet

An enclosure where the operator stands outside using a blasting nozzle through an opening, or openings in the enclosure.

### Dust collector

A device in an exhaust ventilation system used to remove dust from air.

### Exhaust ventilation system

A system that removes contaminated air using the following:

- Enclosure or hood
- Duct work
- Dust collecting equipment
- Exhauster
- Discharge stack

### Local exhaust ventilation

The mechanical removal of contaminated air from the point where the contaminant is being generated or liberated.

### Make-up air systems

A ventilation system that controls the volume of outdoor air supplied to a building to replace air being exhausted.

### Rotary blast cleaning table

An enclosure where the pieces to be cleaned are placed on a rotating table and passed automatically through a series of blast sprays.

### Tempered make-up air

Air which has been conditioned by changing its heat content to get a specific desired temperature.

### Ventilation

The provision, circulation or exhausting of air into or from an area or space.

# Helpful Tools

Sampling for Airborne Contaminant Concentrations .....R-3
Types of Abrasives used for Blasting Operations.....R-4
Types of Coatings Removed in Blasting Operations.....R-5
Blast Cleaning Enclosures and Recommended Inward Air Velocities.....R-6

# Notes

# Sampling for Airborne Contaminant Concentrations (Links)

Use with the Abrasive Blasting Rule, Chapter 296-818 WAC



Use the following links for information on sampling airborne contaminant concentrations in the breathing zone:

- Personal Sampling for Air Contaminants:
  - http://www.osha.gov/dts/osta/otm/otm_ii/otm_ii_1.html#1
- Index of Sampling and Analytical Methods
  - http://www.osha.gov/dts/sltc/methods/toc.html
  - http://www.osha.gov/SLTC/samplinganalysis/index.html
- Sampling and Analytical Methods
  - http://www.osha.gov/dts/sltc/methods/index.html
  - http://www.osha.gov/SLTC/samplinganalysis/index.html

# Types of Abrasives used for Blasting Operations

Use with the Abrasive Blasting Rule, Chapter 296-818 WAC

This helpful tool outlines the types and examples of abrasives used for blasting operations.

| Types of Abrasive | Examples of Abrasives | Other Information |
|---|---|---|
| Synthetic or natural mineral grains | – Crystalline Silica<br>– Garnet | Silica sand is the most hazardous.<br>Limit the use of silica sand wherever possible.<br><br>**Link:**<br>For types of abrasive used in place of silica go to the Occupational Safety and Health Administration's (OSHA), homepage at: http://www.osha.gov/. Select 'S' for Silica. |
| Slag abrasive | – Copper slag<br>– Nickel slag<br>– Mixed metal slag | May contain heavy metals. |
| Metallic shot or grit | – Steel<br>– Chilled cast iron | The potential hazard is considered minimal. |
| Organic | – Ground corncobs<br>– Ground walnut shells | Readily combustible organic abrasives can form explosive mixtures with air. |

# Types of Coatings Removed in Blasting Operations

Use with the Abrasive Blasting Rule, Chapter 296-818 WAC



This helpful tool outlines the types and examples of coatings removed during blasting operations.

| Types of Coatings | Examples of Coatings | Other Information |
|---|---|---|
| **Surface**<br>- Formed during the fabrication of a part<br><br>**Protective**<br>- Applied after fabrication | Those containing toxic metals:<br>- Paints containing mercury<br>- Cadmium plating<br>- Lead:<br>▪ Paints on structural steel<br>▪ Deposits on pistons of internal combustible engines<br><br>Plastic or resin:<br>- May decompose and produce irritating by-products during blasting operations | The type of coating should be known to evaluate potential hazards. |

# Blast Cleaning Enclosures and Recommended Inward Air Velocities

Use with the Abrasive Blasting Rule, Chapter 296-818 WAC

This helpful tool provides examples of blast cleaning enclosures and the recommended air velocities used for abrasive blasting operations.

| Examples of Blast Cleaning Enclosures | Recommended Air Velocities in Feet Per Minute (fpm) |
|---|---|
| Abrasive blasting cabinets | At least 500 fpm at the hand openings |
| Blast cleaning rooms | At least 300 fpm with well baffled air inlets |
| Rotary blast cleaning tables | 200-250 fpm at the access opening |
| Abrasive separators<br>Bucket elevators<br>Other accessory abrasive handling equipment, including blast cleaning drums and barrels | 200-250 fpm at all openings |

# Abrasive Blasting

Chapter 296-818 WAC

# Index


## A

Application, chapter scope, **100**-1
Abrasive blasting
- combustible organic, **300**-2-3
- operations, **300**-2-5
- personal protective equipment (PPE), **200**-3-5
- separator, **400**-4

Access blast cleaning enclosures, doors and openings, **300**-3-4
Accumulated dust, exhaust ventilation systems, **400**-4
Air flow, blast cleaning enclosures, **300**-3-4
Air inlets, and access openings, blast cleaning enclosures, table 2, **300**-3-4
Airborne contaminants, blast cleaning enclosures, **300**-3-4
Aisles, clear, housekeeping, **200**-6
American National Standards Institute (ANSI), exhaust ventilation systems, **400**-2-3
Aprons, personal protective equipment (PPE), table 1, **200**-4
Automatic blast cleaning systems, combustible organic abrasives, **300**-2

## B

Blast cleaning enclosures and recommended inward air velocities, helpful tool **R**-6
Blast cleaning
- enclosures, table 2, **300**-3-4
- equipment, discharging air, **400**-4
- nozzles, **300**-5
- rooms, personal protective equipment (PPE), table 1, **200**-4

Blasting operations
- combustible organic abrasives, **300**-2
- dust hazards, **200**-2-3

Bonded and grounded, blast cleaning nozzles, **300**-5

## C

Chapter application, scope, **100**-1
Cleaning nozzles, blast, **300**-5
Clean-up, spills, housekeeping, **200**-6
Coatings, dust hazards, **200**-2
Concrete surfaces (note), **200**-5
Collecting equipment, exhaust ventilation systems, **400**-4
Combustible organic abrasives, **300**-2
Composition and toxicity, abrasive blasting operations, **200**-2
Contaminated air, **300**-3-4
Construction, exhaust ventilation systems, **400**-2

## D

Definitions, **500**-1-2
Design and operation, ventilation systems, **300**-3
Discharging air, blast cleaning equipment, **400**-4
Doors, blast cleaning enclosures, table 2, **300**-3
Dust
- combustible organic abrasives, **300**-2
- collecting equipment, exhaust ventilation systems, **400**-4
- concentrations, permissible exposure limits, **200**-3
- disposal, **400**-4
- escaping, blast cleaning enclosures, **300**-3
- explosion, **200**-2, **300**-2, **400**-3
- hazards, respiratory, **200**-2-5; **400**-2
- spills, housekeeping, **200**-6
- leaks, exhaust ventilation systems, **400**-4

## E

Equipment, dust collecting, **400**-4
Equivalent protection, personal protective equipment (PPE), table 1, **200-**4
Enclosures, blast cleaning, **300**-3-4
Exhaust discharge, blast cleaning enclosures, **300**-3
Exhaust system, make-up air systems, **300**-3
Exhaust ventilation systems, all requirements, **400**-1-4
Exhausted air, **300**-3
Explosion, dust hazards, **200**-2
Explosion venting and wiring, table 3, **400**-3
Explosive dust mixtures, **300**-2
Eye protection, personal protective equipment (PPE), table 1, **200**-4

# Abrasive Blasting

Chapter 296-818 WAC

# Index


## F

Face protection, personal protective equipment (PPE), table 1, **200**-4
Filtering face piece, **200**-4
Fire dust hazards, **200**-2, **300**-2
Flammable or explosive dust mixtures, **300**-2, **400**-3

## G

Gloves, personal protective equipment (PPE), table 1, **200**-4
Grounded and bonded, blast cleaning nozzles, **300**-5

## H

Hazards, health
- blast cleaning enclosures, **300**-3
- combustible organic abrasives, **300**-2
- construction, **400**-2
- dust hazards, **200**-2
- personal protective equipment (PPE), **200**-4-5

Helpful tools, **R**-1-6
Housekeeping, **200**-6

## I

Inspection and maintenance, exhaust ventilation systems, **400**-4
Installation, exhaust ventilation systems, **400**-2-4

## L

Leaks, dust, exhaust systems, **400**-4

## M

Maintenance and inspection, exhaust ventilation systems**, 400**-4
Make-up air systems, exhaust system, **300**-3
Mounting, blast cleaning nozzles, **300**-5

## N

National Fire Protection Association (NFPA), exhaust ventilation systems, **400-**2
Nozzles
- blast cleaning, **300**-5
- combustible organic abrasives, **300**-2

## O

Observation window, blast cleaning enclosures, table 2, **300**-4
Openings, blast cleaning enclosures, **300**-3-4
Operating valves, blast cleaning nozzles, **300**-5
Operations, abrasive blasting, **300-**2-5
Organic combustible abrasives, **300**-2

## P

Permissible exposure limits
- dust hazards, **200-**2-3
- personal protective equipment (PPE), **200**-3
- blast cleaning enclosures, **300**-3-4

Personal protective equipment (PPE), **200**-3-5
Pressure drop gauge, **400**-4
Prohibitions
- combustible organic abrasives, **300**-2
- dust accumulations, **200-**6

## R

Rebounding, **200**-4
Relief valve (note), **300**-5
Repair and cleaning, exhaust ventilation systems, **400**-4
Replacement, exhausted air, **300**-3
Respirators, personal protective equipment (PPE), **200**-4-5


Index

# Index


## S

Safety, general, all requirements, **200**-1-6
Sampling for airborne contaminant concentrations,
(Links) helpful tool, **R**-3
Scope, chapter application, **100**-1
Shot, steel, **200**-6
Slipping hazards, housekeeping, **200**-6
Small access openings, blast cleaning enclosures,
table 2, **300**-4
Static pressure drop, exhaust ventilation systems,
**400**-4
Supply, personal protective equipment (PPE), **200**-3

## T

Tables
blast cleaning enclosures, table 2, **300**-4
explosion venting and wiring,
table 3, **400**-3
personal protective equipment (PPE),
table 1, **200**-3
Tempered make-up, exhausted air, **300**-3
Toxicity, abrasive blasting operations, **200**-2
Types of abrasives used for blasting operations,
helpful tool, **R**-4
Types of coatings removed in blasting operations,
helpful tool, **R**-5

## V

Ventilation systems, **300**-3
Venting, explosion, table 3, **400**-3
Visibility, blast cleaning enclosures, **300**-3

## W

Walkways, clear, housekeeping, **200**-6
Wet blasting methods, **200**-2-3
Window, observation, blast cleaning enclosures,
table 2, **300**-4
Wiring, explosion, table 3**, 400**-3




# Abrasive Blasting

Chapter 296-818 WAC

# Statutory Authority

**296-818-100 Scope.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-100, filed 06/06/06, effective 09/01/06]

**296-818-200 General safety.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-200, filed 06/06/06, effective 09/01/06]

**296-818-20005 Dust hazards.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-20005, filed 06/06/06, effective 09/01/06]

**296-818-20010 Personal protective equipment (PPE).**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-20010, filed 06/06/06, effective 09/01/06]

**296-818-20015 Housekeeping.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-20015, filed 06/06/06, effective 09/01/06]

**296-818-300 Operations.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-300, filed 06/06/06, effective 09/01/06]

**296-818-30005 Combustible organic abrasive.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-30005, filed 06/06/06, effective 09/01/06]

**296-818-30010 Blasting cleaning enclosures.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-30010, filed 06/06/06, effective 09/01/06]

**296-818-30015 Blast cleaning nozzles.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-30015, filed 06/06/06, effective 09/01/06]

**296-818-400 Exhaust ventilation systems.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-400, filed 06/06/06, effective 09/01/06]

**296-818-40005 Construction.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-40005, filed 06/06/06, effective 09/01/06]

**296-818-40010 Explosion venting and wiring.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-40010, filed 06/06/06, effective 09/01/06]

**296-818-40015 Inspection and maintenance.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-40015, filed 06/06/06, effective 09/01/06]

**296-818-500 Definitions.**

[Statutory Authority: RCW 49.17.010, .040, .050, and .060. 06-12-074 (Order 06-05), § 296-818-500, filed 06/06/06, effective 09/01/06]